

## REMARKS

The application includes claims 1-56 prior to entering this amendment. Claims 1-56 have been cancelled. New claims 57-75 have been added. The applicants do not add new matter and request reconsideration and allowance of the present application.

### **New claims 57-75 distinguish all the cited art of record**

Referring initially to claim 62, this new claim recites “the circuitry configured to piggyback the identified receipt time in an unused field of a packet expiration notice that is generated for expired packets, the packet expiration notice corresponding to the expired packet, wherein the network processing device utilizes the packet expiration notice for communicating the identified receipt time back to an originating source of the corresponding packet.” None of the cited references disclose this feature.

Farrell discloses a router 106 that sends an error message 107 to a source node upon detecting a timeout. *See* paragraph 0021. The router 106 utilizes the error message 107 to report an exceeded lifetime and does piggyback the receipt time in the error message 107. *See* paragraph 0021 indicating that the error message 107 conforms to the Internet Control Message Protocol (ICMP).

Shin discloses a Burst Header Packet (BHP) that travels an offset time ahead of each Data Burst (DB) to configure an optical switch before the DB arrives. *See* paragraph 0005. Nodes in the network can communicate when the Burst Header Packet was sent and received using a designated OAM/2 packet, which is not a packet expiration notice. *See* paragraph 0091. Thus, Shin also fails to disclose “the circuitry configured to piggyback the identified receipt time in an unused field of a packet expiration notice that is generated for expired packets, the packet expiration notice corresponding to the expired packet, wherein the network processing device utilizes the packet expiration notice for communicating the identified receipt time back to an originating source of the corresponding packet.”

Adhikari discloses techniques for improved monitoring and analysis of network traffic. Packet arrival and departure times are communicated using designated packets (FIG. 1), and thus Adhikari also fails to disclose “the circuitry configured to piggyback the identified receipt time in an unused field of a packet expiration notice that is generated for expired packets, the packet expiration notice corresponding to the expired packet, wherein the network processing device

utilizes the packet expiration notice for communicating the identified receipt time back to an originating source of the corresponding packet.”

Hefel discloses calculating a round trip transit time based on a launch time and a current time. The launch time is included in a designated test message (col. 7, lines 27-57), thus Hefel fails to disclose “the circuitry configured to piggyback the identified receipt time in an unused field of a packet expiration notice that is generated for expired packets, the packet expiration notice corresponding to the expired packet, wherein the network processing device utilizes the packet expiration notice for communicating the identified receipt time back to an originating source of the corresponding packet.”

Makowski discloses sending timestamps between offices 16a and 16b for the purposes of calculating roundtrip delays. *See* FIG. 1, *see* Abstract. The timestamps are included in designated packets, thus Makowski fails to disclose “the circuitry configured to piggyback the identified receipt time in an unused field of a packet expiration notice that is generated for expired packets, the packet expiration notice corresponding to the expired packet, wherein the network processing device utilizes the packet expiration notice for communicating the identified receipt time back to an originating source of the corresponding packet.”

Gentle discloses a method of testing per hop behavior between endpoints on packet networks. Gentle’s utilizes designated test IP packets (*See* FIG. 3), thus Gentle fails to disclose “the circuitry configured to piggyback the identified receipt time in an unused field of a packet expiration notice that is generated for expired packets, the packet expiration notice corresponding to the expired packet, wherein the network processing device utilizes the packet expiration notice for communicating the identified receipt time back to an originating source of the corresponding packet.”

Shay discloses clock synchronization, which, similar to the other references uses designated timing packets transmitted over the network. The designated timing packets are not packet expiration notices, and thus Shay also fails to disclose “the circuitry configured to piggyback the identified receipt time in an unused field of a packet expiration notice that is generated for expired packets, the packet expiration notice corresponding to the expired packet, wherein the network processing device utilizes the packet expiration notice for communicating the identified receipt time back to an originating source of the corresponding packet.”

In contrast to all the cited references discussed above, claim 62 recites “the circuitry configured to piggyback the identified receipt time in an unused field of a packet expiration notice that is generated for expired packets, the packet expiration notice corresponding to the expired packet, wherein the network processing device utilizes the packet expiration notice for communicating the identified receipt time back to an originating source of the corresponding packet.” Thus, claim 62 should be allowed. Claims 63-66, being dependent, should be allowed for at least the same reasons.

Claim 57 recites “if one of the decremented values are identified as being below the predefined threshold, the circuitry configured to extract from a corresponding packet of the traffic a timestamp inserted by the source endpoint, wherein the timestamp indicates when the corresponding packet was transmitted from the source endpoint; the circuitry configured to identify a receipt time for the corresponding packet, the receipt time indicating when the corresponding packet was received at the network processing device; the circuitry configured to determine a difference between the extracted timestamp and the identified receipt time; and the circuitry configured to piggyback the determined difference in an unused field of a packet expiration notice that is generated for expired packets, the packet expiration notice corresponding to the expired packet, wherein the network processing device utilizes the packet expiration notice for communicating the determined difference back to an originating source of the corresponding packet.” None of the cited references disclose at least these features.

As discussed previously, none of the cited references utilize a packet expiration notice for communicating the identified receipt time back to an originating source of the corresponding packet. For similar reasons, none of the cited references disclose at least “the circuitry configured to piggyback the determined difference in an unused field of a packet expiration notice that is generated for expired packets, the packet expiration notice corresponding to the expired packet, wherein the network processing device utilizes the packet expiration notice for communicating the determined difference back to an originating source of the corresponding packet.” Thus, for at least this reason, claim 57 should be allowed.

Furthermore, Farrell’s routers 106 do not extract a timestamp from a packet if one of the decremented values are identified as being below the predefined threshold. *See* paragraph 0021 indicating that the router 106 generates the error notice 107 according to ICMP. Moreover, it is

not possible for the router to extract the timestamp value from a packet if one of the decremented values are identified as being below the predefined threshold because the source node 102 does not include transmission timestamps in the low lifetime packets. *See* FIG. 1, also see paragraph 0021.

Even if Farrel's source node 102 did include transmission timestamps in the low lifetime packets (which it does not), and even if the router 106 extracted transmission timestamps from expired packets (which it does not), the router 106 does not "... determine a difference between the extracted timestamp and the receipt time." Shin does not cure any of these deficiencies; thus, claim 57 should be allowed. Claims 58-61, being dependent, should be allowed for at least the same reasons.

Dependent claim 60 should be allowed for additional reasons as its base claim 57. For example, even if Farrel's source node 102 did include transmission timestamps in the low lifetime packets (which it does not), and even if the router 106 extracted transmission timestamps from expired packets (which it does not), and even in the router 106 determining a difference between the extracted timestamp and the receipt time (which it does not), Farrel would still fail to disclose the recited feature of "wherein the unused field is at least one selected from the group including a Destination Unreachable Message field, a Time Exceeded Message field, and a Source Quench Message field." The other references do not cure any of these deficiencies; thus, claim 60 should be allowed for these additional reasons.

Claims 66-75 should be allowed for at least some of the reasons explained above. Finally, it is noted that all the new claims are supported by numerous portions of the specification, for example page 6, line 22 through page 8, line 6.

### **Claim Rejections - 35 U.S.C. § 103**

The examiner rejected claims 1, 3, 10-12, 16-18, 21, 23, 30, 32, 42, 43, and 50-54 under 35 U.S.C. § 103(a) as being unpatentable over Farrel *et al.* (U.S. Patent Application Publication No. 2006/0098586) in view of Shin *et al.* (U.S. Patent Application Publication No. 2007/0212065).

Claims 1, 3, 10-12, 16-18, 21, 23, 30, 32, 42, 43, and 50-54 have been cancelled.

The examiner rejected claims 2, 7-9, 13-15, 20, 22, 27-29, 31, and 36-39 under 35 U.S.C. § 103(a) as being unpatentable over Farrell in view of Shin, as applied to claim 1 above, and further in view of Adhikari *et al.* (U.S. Patent Application Publication No. 2004/0252646).

Claims 2, 7-9, 13-15, 20, 22, 27-29, 31, and 36-39 have been cancelled.

The examiner rejected claims 4, 24, and 33 under 35 U.S.C. § 103(a) as being unpatentable over Farrell in view of Shin, as applied to claim 3 above, and further in view of Hefel *et al.* (U.S. Patent 5,563,875).

Claims 4, 24, and 33 have been cancelled.

The examiner rejected claims 5, 6, 19, 25, 26, 34, 35, 40, and 44 under 35 U.S.C. § 103(a) as being unpatentable over Farrell in view of Shin, as applied to claim 3 above, and further in view of Makowski *et al.* (U.S. Patent Application Publication No. 2004/0240431).

Claims 5, 6, 19, 25, 26, 34, 35, 40, and 44 have been cancelled.

The examiner rejected claim 41 under 35 U.S.C. § 103(a) as being unpatentable over Farrell in view of Shin, and Adhikari, as applied to claim 20 above, and further in view of Gentle (U.S. Patent Application Publication No. 2004/0223458).

Claim 41 has been cancelled.

The examiner rejected claims 45 and 46 under 35 U.S.C. § 103(a) as being unpatentable over Farrell in view of Shin and Makowski, as applied to claim 44 above, and further in view of Adhikari.

Claims 45 and 46 have been cancelled.

The examiner rejected claims 47-49, 55, and 56 under 35 U.S.C. § 103(a) as being unpatentable over Farrell in view of Shin, as applied to claim 42 above, and further in view of Shay *et al.* (U.S. Patent Application Publication No. 2007/0153774).

Claims 47-49, 55, and 56 have been cancelled.


### CONCLUSION

For the foregoing reasons, the applicants request reconsideration and allowance of the present application is requested. The applicants encourage the examiner to telephone the undersigned if it appears that an interview would be helpful in advancing the case.

**Customer No. 73552**

Respectfully submitted,

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